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CLINTON, MARYLAND.

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## FURTHER LIGHT ON OUR PURPLE-FLOWERED EUPATORIUMS.

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LAST year Dr. S. F. Blake on his visit to England at my request kindly examined and made photographs of and notes on some of the specimens of North American purple-flowered Eupatoriums preserved in some of the old herbaria there. American botanists are certainly under obligation to Dr. Blake for the care he gave to this matter. This information and other information which has come to hand have thrown much additional light on the problem of the proper identification of these plants heretofore discussed by Prof. K. M. Wiegand and myself in RHODORA (22: 57 and 22: 157). The facts to be added to the discussion may be grouped under the different species as follows:

### EUPATORIUM TRIFOLIATUM

Dr. Blake's notes are as follows: "Clayton 620, Brit. Mus.—Leaves lanceolate, cuneate into petiole, thin, penninerved, beneath gland-dotted and along veins sordid-pilosulous; stems essentially glabrous



(but inflorescence sordid-pilosulous), not evidently glaucous, purple at nodes, not speckled, pithy and solid!; inflorescence convex. (No specimen of this species in Linn. Herb.) ”

The photograph is of the upper part of a spindling plant. As noted by Prof. Wiegand “the specimen seems abnormal,” but specimens exactly answering it are quickly found wherever the species is at all abundant. However, it is easily understandable how it was misunderstood in the absence of notes. The statement made concerning this species that “as far as can be made out from the print, the stem is purple and glaucous and not darker at the nodes. The stem is also cracked in one place in a manner more likely to occur if it were hollow” is now to be contrasted with the facts as given by Dr. Blake and quoted above.

It is very evident from both the description and specimen of *Eupatorium trifoliatum* that it is the plant treated both by Prof. Wiegand and myself as species No. 4.

#### EUPATORIUM MACULATUM.

The *Amoenitates Academicae* of Linnaeus are devoted almost entirely to the dissertations of his pupils. However, all of these dissertations had previously been published as separate pamphlets. It has come to be realized, therefore, that references should properly be made to the original dissertations and not to the *Amoenitates*. These original dissertations were issued under the names of the various pupils of Linnaeus, and in the absence of a direct statement that the work was the work of Linnaeus, it seems to me that the ordinary rule should be followed and the species described in these dissertations should be credited to their respective authors and not to Linnaeus.

It has been supposed that when Linnaeus came to republish these species in the *Amoenitates*, he merely copied the original dissertations with the exception of some preliminary matter. As a general rule, he did this, but not infrequently he made changes, sometimes of an extremely radical nature. The result is that it is never safe to rely on the *Amoenitates*. The original dissertations must always be consulted. Unfortunately, these original dissertations are scarce. There are 186 of them in all, botanical and non-botanical, and my information is that a complete set does not exist in the United States.

In discussing *Eupatorium maculatum* both Prof. Wiegand and I relied entirely on the description appearing in the *Amoenitates* and



this description I quoted in RHODORA (22: 161). The true original description, however, is as follows:

“77. EUPATORIUM (*maculatum*) foliis quinque, lanceolatis, aequaliter serratis, petiolatis, venosis.

“*Descr. Folia* quinque ad genicula, lanceolata, aequaliter serrata. *Caulis* tenuissime maculatus. *Varietas Eupatorii purpurei* ad hoc, ut & ejus synonyma & descriptio spectant. *Eupatorium* enim *purpureum* foliis quaternis, lanceolato-ovatis, inaequaliter serratis, rugosis est.”

Juslenius, Centuria I. Plantarum 27. 1755.

It will be noted that Juslenius did not refer to any particular collection, but merely gave a general description, although in this dissertation when he was basing new species on collections by Kalm, Loeffling or Hasselquist, he cited these collections.

The description previously copied by me from the Amoenitates (RHODORA 22: 161) was given as published by Linnaeus in 1759. To the original description it will be noted he (1) added all the citations and the habitat; (2) added the word “tomentosis” in the first line; and (3) added the words “vel sex” in the middle of the phrase “folia quinque ad genicula.”

On the basis of a specimen in the Linnaean herbarium, Prof. Wiegand identified this species. A photograph of this specimen has now been furnished me by Dr. Blake. It shows a specimen having two whorls of six leaves each. It therefore was not the specimen on which the original description of *Eupatorium maculatum* was based as was assumed (l.c. 59), because that description called only for a plant having five leaves at each node.

This specimen may well have been before Linnaeus when he enlarged the description of the species, although it is equally possible that his enlarged description was merely taken from previous authors. Therefore, I will quote Dr. Blake's description of the specimen: “One sheet, K(alm), in Linn. Herb. Leaves oblong or ovate oblong, feather veined, simply crenate-serrate, thickish (more veiny and thicker than the two sheets of *E. purpureum*), acuminate, cuneate at base, pilose beneath with many-celled hairs, blade to  $12 \times 4.5$ –5 cm., petiole 1–1.2 cm.; stem purplish (probably once glaucescent?) with very few linear spots, glabrous below last whorl of large leaves; peduncle and convex inflorescence densely sordid-pilosulous with lax many-celled hairs; involucre 7.5 mm. high, purplish-tinged; corollas 6 mm. long, pale purplish-tinged, exserted about 3 mm.”



The photograph shows a plant with strongly convex inflorescence. It is not the northern species with flat-topped inflorescence with which it was identified by Prof. Wiegand, but is the species described by Juslenius. It is readily placed in Wiegand's Species No. 3 by the use of his key in RHODORA (22: 62).

The original description of *Eupatorium maculatum* was certainly very plain. Linnaeus afterwards added citations, all of which were incorrect (RHODORA 22: 162). These must of course be disregarded and the name applied to the plant to which the description applies, the Species No. 3 of Prof. Wiegand's and my treatments. It may be added that the only plants cited by or known to Linnaeus with leaves in whorls of more than four belonged to this species.

#### EUPATORIUM PURPUREUM.

When in 1755 Juslenius removed from the aggregate *Eupatorium purpureum* his *Eupatorium maculatum* with leaves in whorls of five, he left in it species with leaves in whorls of four. Specimens with leaves in whorls of six were not provided for, but later Linnaeus took them out also and added them to *Eupatorium maculatum*. What was left in *Eupatorium purpureum* consisted in small part of what Prof. Wiegand treated as Species No. 2 and in large part of his Species No. 1. The Linnaean description applies to Species No. 1. The work of Juslenius in keeping the Linnaean name for the plant to which the Linnaean description applied was excellent. That is the plant treated by Prof. Wiegand as *Eupatorium verticillatum* Lam., and that is the plant which should be called *Eupatorium purpureum*.

In conclusion it is proper to emphasize again the point that the idea prevalent in certain quarters that these old species should be identified by specimens in the old herbaria without reference to descriptions or citations is most incorrect and mischievous. The Linnaean herbarium especially is full of specimens incorrectly labeled, often by Linnaeus himself I believe. In dealing with *Iris*, Dyckes (the Genus *Iris* p. 6) says "very nearly half of the Linnaean specimens appear to be wrongly named." Gray (Proc. Am. Acad. 17: 177-178) shows the mixtures in *Solidago*. I myself went over the sheets of *Carex* and found that the errors were numerous. The specimens when they agree with descriptions are often very helpful, but the names should be applied in accordance with descriptions given and not according to specimens of whose history nothing is known.

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